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U.S. Nuclear Regulatory Commission
Attention: Document Control Desk
Washington, D.C. 20555

Gentlemen:

Subject: Oyster Creek Nuclear Generating Station
Docket No. 50-219
License No. DPR-16
Oyster Creek Drywell Containment

On November 13, 1987, the GPU Nuclear Staff met with NRR and Region 1 representatives to review the data and assessments related to UT measurements at elevations 50'-2" and 87'-5" of the Oyster Creek Drywell. These measurements were initiated by GPUN during an outage of opportunity to confirm the condition of the drywell above the sand entrenchment region.

To support the Oyster Creek restart, GPUN prepared an analysis that assumed uniform thinning to the upper regions of the drywell over the entire surface of the drywell vessel. UT measurements made on the drywell had demonstrated that this was not the case, and the assumption of uniform thinning was conservative. Using this assumption, GPUN had concluded that the drywell was structurally adequate based on the analytical approach described in Attachment 5 to the safety evaluation (SE No. 000243-002). This analysis was identical in method to earlier drywell evaluations which were reported to NRC except that allowable stress used in the upper cylinder analysis was derived from the lowest value of certified mill test report (CMTR) properties for the plate material actually used in constructing portions of the drywell.

The purpose of the safety evaluation was to address the structural adequacy for a vessel inservice condition. Even though the staff agreed that it would be safe to restart and operate Oyster Creek, GPUN agreed to explore alternate analysis methods to demonstrate ASME code compliance for a new vessel. GPUN contracted CB&I for this effort. Briefly, the CB&I effort was an axisymmetric analysis of a cylinder with a uniform thickness of 0.59 inches, and subject to an internal pressure of 62 psig. The cylindrical model included the effects of the stiffeners which are located at three elevations (80'-6-1/4", 84'-11-3/4", and 88'-8-1/2") on the Oyster Creek Drywell as well as the stiffening effect of the knuckle transition below elevation 71'-10-3/4".

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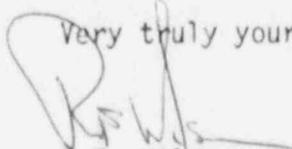
The results from the CB&I code analysis have concluded that three of four regions adjacent to the stiffeners meet the code criteria. However, a 40" region of the cylinder model near elevation 75'0" exceeds the code allowable values for general primary membrane stress by approximately 8.5%. Since one area of this hypothetical model does not meet the code, we cannot conclude that full code compliance for a design condition is demonstrated by this model.

This model has inherent conservatism which must be considered in the overall drywell evaluation. First, the model does not duplicate the actual local areas of degradation. For example, a single thickness (0.59) may facilitate the analysis, but may overpredict the true stress state. Second, the ASME Code allowable stresses are intended for new construction where an underrun of 0.010" below specified metal thickness is permitted. This underrun which is equivalent to a 1.6% overstress is not factored into the analysis. Third, the ASME Code allowable stresses are based on specified minimum mechanical properties versus actual material properties. Fourth, the Code includes a factor of safety over the design stresses which is calculated by dividing the minimum tensile strength of the material by the specified allowable stress, which numerically is 3.64. By using the calculated general primary membrane stress, the factor of safety for this model is approximately 3.37.

Based on these facts and good engineering judgement, we are concluding that the drywell was proven structurally adequate by ASME code methodology with the allowable stress derived from the CMTR's. Since we are analyzing an inservice condition and not a design condition, we do not believe a change to Technical Specification 5.2A is required.

The CB&I report is enclosed for your inspection. If you have any questions or comments on this subject, Please contact Mr. M.W. Laggart (201) 316-7968.

Very truly yours,


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Technical Functions

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